

EXHIBIT A

**IN THE UNITED STATES DISTRICT COURT
FOR THE SOUTHERN DISTRICT OF NEW YORK**

THE AUTHORS GUILD, INC., et al.

Plaintiffs

Civil Action No. 05 CV 8136 (DC)

V.

GOOGLE INC,

Defendant.

**EXPERT REPORT OF
JUDITH A. CHEVALIER**

May 4, 2012

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I. Introduction

A. Background and Experience

1. I am the William S. Beinecke Professor of Economics and Finance at the Yale University School of Management. I also hold a joint courtesy appointment at the Yale Department of Economics. I received my undergraduate degree in Economics from Yale University in 1989 and my Ph.D. in Economics from the Massachusetts Institute of Technology in 1993. I was an assistant professor in the Department of Economics at Harvard University from 1993 to 1994. I was a faculty member at the University of Chicago Graduate School of Business from 1994 to 2001, reaching the rank of full professor in 1999. I have been a faculty member at Yale University School of Management since 2001. I am a Research Associate at the National Bureau of Economic Research. From 2007 to 2009, I was the Deputy Provost for Faculty Development at Yale University.
2. At Yale University, I teach courses in competitive strategy at the MBA level including a course entitled "Technology Strategy." This course helps students understand strategic issues that arise in high technology industries. I also teach a course entitled "Business, Public Policy and the Information Economy" at the undergraduate level, although I have previously taught a version of this course at the MBA level. This course examines copyright, antitrust, and regulatory issues in telecommunications and broadcasting. At Yale University, I am also a former member and Chair of the University's Committee on Cooperative Research, a committee that oversees the University's patenting and licensing policies.
3. My research interests include corporate finance and applied industrial organization, and I have published numerous articles in these areas in the *American Economic Review*; *Journal of Political Economy*; *The Journal of Industrial Economics*; *The Journal of Law and Economics*; *The Journal of Law, Economics, & Organization*; *Quarterly Journal of Economics*; *Journal of Marketing Research*; and *The Journal of Finance*, among others. In 1999, I received the Elaine Bennett Research Prize, a prize for excellence in research by a woman economist given every two years by the Committee on the Status of Women in the Economics Profession of the American Economic Association.
4. I am a co-editor of the *RAND Journal of Economics*, a former co-editor of the *American Economic Review* and a former co-editor of *The B.E. Journal of Economic Analysis and Policy*. I have previously served as an associate editor of *The Journal of Finance*, *The Quarterly Journal of Economics*, the *Journal of Economic Perspectives*, and the *RAND Journal of Economics*, among others. I am a member of the Advisory Board of *Quantitative Marketing and Economics* and a former member of the Editorial Board of *The Journal of Industrial Economics*. I was an elected member of the Executive Committee of the American Economic Association. In 2006, I was elected to the American Academy of Arts and Sciences.

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5. My *curriculum vitae*, which is attached as Appendix A, gives more biographical details and lists my writings. Appendix B specifies the testimony that I have given in the past four years as an expert witness. Employees of Analysis Group, Inc., an economics research and consulting firm, working under my direction and supervision, have assisted me in this assignment. I am being compensated at an hourly rate of \$750 for time spent on this matter. In addition, I receive compensation based on the professional fees of Analysis Group. This compensation is not contingent upon the nature of my findings or on the outcome of this litigation.

B. Assignment

6. I understand that Plaintiffs, three individual authors and the Authors Guild, allege that Google, Inc. (“Google”) has infringed the Plaintiffs’ copyrights by scanning and indexing several million books as part of its Google Books project (“Google Books”), as well as by making certain related uses of those works, such as displaying snippets. I have been asked by counsel for Google to assess certain economic factors relevant to the Google Books Project and the effect of such scanning and related uses on authors and consumers.

C. Summary of Conclusions

7. I conclude, based on the evidence I have seen, that: (1) Google Books is a new good – it provides benefits to consumers that previous goods did not; (2) Google Books provides value to authors; (3) economic analysis provides no reason to believe that Google Books has superseded any potential market for books or licenses to scan and index books.
8. My opinions are contained in this report. In reaching these opinions, I have considered various materials, including depositions and documents produced in discovery, articles, and other public documents and data. The list of sources I have considered in preparing this report is attached as Appendix C. My work in this matter is ongoing, and I may amend or supplement this report in light of new information, additional discovery, or expert testimony and opinion in this case.

II. The Google Books Project

9. Google Books is a search tool developed by Google. Users of Google Books enter search terms into Google’s search engine; Google Books displays certain information about books with content that contains a match for that search term.¹ For any book that is part of the Google Books project, the user can see general information about the book – its title, author, publisher, date of publication, etc. The user is also provided with links to online booksellers and libraries carrying the book.²

¹ See <http://books.google.com/googlebooks/about.html>, accessed April 30, 2012. See also Deposition of Daniel Clancy, February 10, 2012, pp. 122-123.

² Deposition of Daniel Clancy, February 10, 2012, p. 159.

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10. If a book has been determined to be in the public domain, Google Books provides the entire text of the book (“full view”) of that book and users can download a PDF of the book.³ For books not in the public domain, if the author or publisher has given Google permission, users can see a limited number of pages from the book.⁴ In other instances, Google Books provides only a “snippet view” – a small amount of text (about one-eighth of a page)⁵ that displays the search term in context.⁶ Google provides a snippet view for works that have not been confirmed to be in the public domain and for which the author or publisher has not requested that the book be removed from snippet view.⁷ Finally, for some books, Google Books provides no preview;⁸ these include books whose authors have requested that no preview be provided, as well as reference books and books of poetry.⁹
11. Google began developing Google Books in 2004 (at the time, it was known as “Google Print”); Google initially partnered with University of Michigan, Harvard University, Stanford University, Oxford University, and the New York Public Library to scan their collections (or portions thereof).¹⁰ Partners today also include: University of California, Columbia University, Princeton University, the Austrian National Library, Ghent University Library, and Keio University Library.¹¹
12. Books indexed in Google Books come from two primary sources – the “Partner Program” and the “Library Project.” Under the Partner Program, publishers or authors typically authorize Google to display multiple pages from a book.¹² More than 45,000 publishers participate in the Partner Program.¹³
13. The Library Project is the means by which Google has received millions of books from university and public libraries, which it scans and indexes.¹⁴ Google returns the physical

³ See <http://books.google.com/googlebooks/screenshots.html>, accessed April 30, 2012.

⁴ See <http://books.google.com/googlebooks/screenshots.html>, accessed April 30, 2012.

⁵ Declaration of Daniel Clancy in Support of Google Inc.’s Opposition to Plaintiffs’ Motion for Class Certification, February 7, 2012, p. 2.

⁶ See <http://books.google.com/googlebooks/screenshots.html>, accessed April 30, 2012.

⁷ Defendant Google Inc.’s Supplemental Narrative Responses and Objections to Plaintiffs’ Second Request for Production of Documents and Things, pp. 6-7.

⁸ See <http://books.google.com/googlebooks/screenshots.html>, accessed April 30, 2012.

⁹ Deposition of Daniel Clancy, February 10, 2012, pp. 90, 188.

¹⁰ Declaration of Daniel Clancy in Support of Google Inc.’s Opposition to Plaintiffs’ Motion for Class Certification, February 7, 2012, p. 2; and Deposition of Daniel Clancy, February 10, 2012, p. 19. See also <http://books.google.com/googlebooks/history.html>, accessed April 30, 2012.

¹¹ See <http://books.google.com/googlebooks/partners.html>, accessed April 30, 2012.

¹² Declaration of Daniel Clancy in Support of Google Inc.’s Opposition to Plaintiffs’ Motion for Class Certification, February 7, 2012, pp. 2-3. See also <http://books.google.com/googlebooks/screenshots.html>, accessed April 30, 2012.

¹³ Declaration of Daniel Clancy in Support of Google Inc.’s Opposition to Plaintiffs’ Motion for Class Certification, February 7, 2012, p. 3.

¹⁴ Deposition of Daniel Clancy, February 10, 2012, pp. 17-18.

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books to the library; each library may also download a digital copy of each work it provided.¹⁵

14. To date, more than 20 million books have been scanned as part of Google Books.¹⁶ Over 2.5 million books are included in Google Books through the Partner Program;¹⁷ the remainder is included in Google Books through the Library Project.¹⁸ Users of Google Books can see snippets in English for more than four million of these books.¹⁹

III. Google Books is a “New Good”

A. The Introduction of Google Books

15. There is basic agreement in the field of economics that the introduction of new goods is an important contributor to improved consumer well-being. It is also generally agreed that a truly “new good” is one for which no close substitute is already available in the marketplace.²⁰ In other words, a central element that makes a good “new” is its ability to “satisfy previously unmet, or at the least badly met, needs.”²¹ The ability of new goods to address previously unmet needs improves the well-being of society overall; this arises from the fact that existing goods are poor substitutes for new ones.

¹⁵ Defendant Google Inc.’s Supplemental Narrative Responses and Objections to Plaintiffs’ Second Request for Production of Documents and Things, December 9, 2011, p. 8; Deposition of Daniel Clancy, February 10, 2012, p. 35; and Deposition of Stephane Jaskiewicz, February 14, 2012, pp. 63-65.

¹⁶ Declaration of Daniel Clancy in Support of Google Inc.’s Opposition to Plaintiffs’ Motion for Class Certification, February 7, 2012, p. 2.

¹⁷ Declaration of Daniel Clancy in Support of Google Inc.’s Opposition to Plaintiffs’ Motion for Class Certification, February 7, 2012, p. 3.

¹⁸ Deposition of Daniel Clancy, February 10, 2012, pp. 17-18.

¹⁹ Declaration of Daniel Clancy in Support of Google Inc.’s Opposition to Plaintiffs’ Motion for Class Certification, February 7, 2012, p. 2.

²⁰ See, for example, Timothy Bresnahan and Robert Gordon, “Introduction,” *The Economics of New Goods*, eds. Timothy Bresnahan and Robert Gordon (University of Chicago Press, 1996): “An alternative view stresses the differences rather than the similarities of the new good. Automobiles and horses, or automobiles and railroads, are such poor substitutes that we should think of a new item in the utility function – automobile services.” p. 14; Jerry Hausman, “Valuation of New Goods under Perfect and Imperfect Competition,” *The Economics of New Goods*, eds. Timothy F. Bresnahan and Robert J. Gordon (University of Chicago Press, 1996): “...the appropriate measure of distance between two goods is really their cross-price elasticities, which relate to what extent consumers find the two goods to be close substitutes,” pp. 229-230; and Charles Schultze and Christopher Mackie, *At What Price?: Conceptualizing and Measuring Cost-of-Living and Price Indexes*, eds. Charles Schultze and Christopher Mackie (The National Academies Press, 2002): “Products also appear that are novel to the point that there is no place in the CPI item structure to accommodate them: cell phones, home computers, and VCRs are examples. These are products whose characteristics would be difficult to ‘repackage’... into existing goods and services no matter how broadly definitions are drawn,” pp. 155-156.

²¹ Timothy Bresnahan and Robert Gordon, “Introduction,” *The Economics of New Goods*, eds. Timothy Bresnahan and Robert Gordon (University of Chicago Press, 1996), p. 5. While there is basic agreement on this principle, there is no precise dividing line between a new good and an improved version of an old good. See, for example, Charles Schultze and Christopher Mackie, *At What Price?: Conceptualizing and Measuring Cost-of-Living and Price Indexes*, eds. Charles Schultze and Christopher Mackie (The National Academies Press, 2002), pp. 159-160. See also Timothy Bresnahan, “The Apple-Cinnamon Cheerios War: Valuing New Goods, Identifying Market Power, and Economic Measurement,” Unpublished.

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16. Economists often model the introduction of a new good by describing a world in which the new good was always available in theory, but was only available at a prohibitively high price – a price at which no one would be willing to buy the good (often called the “choke price”).²² Once a firm is able to offer the new good at a price that is not prohibitively high (i.e., at a price for which there will be positive demand and which makes sense, on the whole, for the firm), the firm will then introduce that good into the market.²³
17. Therefore, a useful way to think about the introduction of Google Books is to employ the same perspective that economists use to measure the benefits from the introduction of a new good. Prior to the introduction of Google Books, some of the benefits provided were theoretically available to some users in a limited way, but likely at a prohibitive cost.²⁴ For example, consider a consumer who was interested in finding economics books that use the term “choke price.” Such a consumer could go to a very well-equipped library, and sift through all books related to economics in order to find books using the term “choke price.” As part of this search, the consumer would have to decide what books to look through. For example, the consumer could restrict her search to general economics textbooks or expand it to other, more specialized works. More comprehensive searching would take more time. Thus, the benefits of Google Books were partially available to a limited group of consumers (those with access to an excellent library), but the cost of obtaining those partial benefits was prohibitive. The user would have to spend a significant amount of time looking through many books, and much of that time would

²² See, for example, Jerry Hausman, “Valuation of New Goods under Perfect and Imperfect Competition,” in *The Economics of New Goods*, eds. Timothy Bresnahan and Robert Gordon (University of Chicago Press, 1996): “The correct price to use for the good in the preintroduction period is the ‘virtual’ price which sets demand to zero.” p. 210; and Austan Goolsbee, “Subsidies, the Value of Broadband, and the Importance of Fixed Costs,” in *Broadband: Should We Regulate High-Speed Internet Access?*, eds. Robert Crandall and James Alleman (Brookings, 2002): “While this type of analysis is straight forward in principle, the problem in practice is that one typically observes data that are rather far removed from the ‘choke’ price at which demand would go to zero,” p. 279.

²³ The consumer surplus created from the introduction of the new good is modeled as equivalent to the consumer surplus created when the price of the good is reduced from the choke price to the market price.

²⁴ Google Books was not the first book scanning and digitization project to be launched. For example, the Million Book Project, launched in 2000 under the direction of personnel at Carnegie Mellon University, was a cooperative project with universities in China and India, the Biblioteca Alexandrina, and other partners. The project made scanned books accessible at websites in India and China. Other digitization projects include the Library of Congress’s American Memory project which scanned historical documents, photographs, sound recordings, moving pictures, books, pamphlets, and maps; and Project Gutenberg, a project that involved keying in texts. (Gloriana St. Clair, “The Million Book Project in Relation to Google,” *Journal of Library Administration*, 2008, 47:1-2, pp. 151-163.) The key difference between Google Books and past digitization projects relates to scale. Google Books is much more comprehensive and includes over 20 million books, whereas the Million Book Project, for example, included approximately 1.4 million books. The comprehensiveness of Google Books also makes it an effective search index, setting it apart from past digitization projects which primarily provided consumers an alternate means of accessing a book. Overall, the scale and accessibility of Google Books makes it much more valuable to consumers than past digitization efforts. To the extent that payments were made to authors whose books appeared in these earlier digitization efforts, this occurred, to my knowledge, only under circumstances where the full text of the work was available to users. See also Expert Report of Dr. Gloriana St. Clair, May 3, 2012, ¶¶ 5, 10-12, 25.

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presumably be wasted because, for each book reviewed, the book might or might not refer to the term, which might or might not be indexed in a book where it did appear.²⁵ In contrast, searching for “choke price” in Google Books reveals, for example, that the concept is discussed in Austan Goolsbee’s chapter entitled “Subsidies and Broadband Deployment” in *Broadband: Should We Regulate High-Speed Internet Access* (James H. Alleman and Robert W. Crandall, editors), in addition to textbooks where one would expect to find a discussion of choke price.²⁶

18. The introduction of Google Books to anyone with a computer and an internet connection provided the benefit of being able to find books efficiently using particular search terms chosen by the user. It thereby dramatically lowered the search costs of finding books. This point can be seen by comparing searches within Google Books to traditional means of finding books. Consumers have long browsed books in bookstores, for example, and could flip through the text of a book on a shelf. But no given bookstore could display more than a small fraction of the available books on a subject.²⁷
19. Libraries could hold more books than a typical bookstore. Historically, libraries maintained index card catalogues of books. These cards recorded some basic information about a book, but did not allow a user to search its text. Later, widespread adoption of computers allowed library users to search words inside a title and subject heading, as well as some other data regarding the book. Again, however, users could not search the text of a book and could not necessarily choose the search terms that best suited their needs.²⁸ By contrast, Google Books effectively indexes each book using every word that appears in the book and allows users to search books according to their interests rather than a specification provided by someone else. By doing this, Google brought a new good, a text-searchable database of 20 million books, into being.²⁹

²⁵ Expert Report of Dr. Gloriana St. Clair, May 3, 2012, ¶¶ 15, 40.

²⁶ A search for “choke price” on Google Books (with quotation marks) returns approximately 2,700 results, in less than one second. While not every result will relate specifically to economics, this nevertheless represents a significant time saving compared to older methods of search. https://www.google.com/search?q=%22choke+price%22&btnG=Search+Books&tbn=bks&tbo=1#q=%22choke+price%22&hl=en&tbo=1&tbn=bks&psj=1&ei=CF6hT5mgIo6i8gTe-cCECA&start=0&sa=N&bav=on.2,or.r_gc.r_pw.r_qf,.cf.osb&fp=a9ec1c0f3e4f750d&biw=1024&bih=1167, search performed on May 2, 2012.

²⁷ Expert Report of Professor Albert N. Greco, May 3, 2012, ¶ 13; and Expert Report of Bruce S. Harris, May 3, 2012, ¶ 9.

²⁸ Deposition of Paul Courant, April 23, 2012, Rough Transcript, p. 92; Deposition of Paul Aiken, April 19, 2012, Rough Transcript, pp. 114-115; and Expert Report of Dr. Gloriana St. Clair, May 3, 2012, ¶¶ 40-44. It is important to note that the search and index capabilities that define Google Books are feasible only through the scanning and digitization of the underlying book in its entirety. In order to present results that are relevant to each user’s search, the entire book must be scanned and digitized. Therefore, while it is true that an input to Google Books is the scanned, digitized book in its entirety, the output, which represents the actual use of Google Books, employs only small portions of the book, at most.

²⁹ Google accomplished this in less than 10 years. By contrast, University of Michigan estimated that it would take 900 years to digitize its collection of 8 to 9 million works. See Deposition of Paul Courant, April 23, 2012, Rough Transcript, pp. 90, 97.

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20. Google Books serves a different purpose than each of the constituent works that have been scanned and indexed as part of Google Books. Each constituent work serves to provide the reader content that expresses an author's ideas. Google Books, by contrast, is a text-searchable database that provides a means of searching for and identifying the book or books that best suit a reader's needs. Put differently, the complete collection of indexed terms based on the universe of scanned materials can hardly serve as a substitute for any individual book, and no full book can come close to providing the information incorporated in the complete indexed collection.

B. The Effect of Google Books on Consumers

21. As discussed above, a new good creates benefits that were not available with pre-existing goods. Here, I discuss in more detail the nature of those benefits. Most importantly from the consumer's point of view, Google Books reduces the search costs associated with finding relevant content.
22. Economists generally distinguish between direct costs and indirect costs in a transaction. Direct costs (or the "sticker price") refer to the cost of the item itself, while indirect costs can include search costs,³⁰ transaction costs,³¹ or other ancillary costs that one or both parties incur in order to effect the transaction. In some circumstances, these indirect costs can be fairly insignificant; the purchase decision will depend exclusively or largely on the direct cost. In other circumstances, however, these indirect costs can be quite significant, so much so that their presence leads to different consumer choices than would be made in the absence of these indirect costs.³²
23. Search costs can be particularly significant in the context of differentiated products such as books. A consumer often needs to expend significant time and effort in order to identify and locate the content that best matches her needs and interests.³³ Even if the direct cost of a book is one that the consumer is willing to pay, the search costs associated with identifying and locating the right books may be prohibitively high for the consumer. A consumer interested in the economics of new goods might be willing to pay the sticker

³⁰ Search costs refer to the value of time expended as well as other costs associated with identifying and locating a desired product. For example, a prospective employer may spend significant time at job fairs meeting prospective employees and may also advertise in a newspaper.

³¹ Transaction costs refer to costs incurred in order to effect a desired transaction. These can include, for example, the time spent entering personal and credit card information in order to purchase items online. Consumers may choose one online vendor over another if their information is on file with one vendor, but not the other.

³² See, for example, Erik Brynjolfsson, Yu (Jeffrey) Hu and Duncan Simester, "Goodbye Pareto Principle, Hello Long Tail: The Effect of Search Costs on the Concentration of Product Sales," *Management Science*, 2011, 57(8). The authors report: "[W]e find consumers' usage of Internet search and discovery tools, such as recommendation engines, are associated with an increase in the share of niche products. We conclude that the Internet's Long Tail is not solely due to the increase in product selection but may also partly reflect lower search costs on the Internet. If the relationships we uncover persist, the underlying trends in technology portend an ongoing shift in the distribution of product sales."

³³ See Expert Report of Professor Albert N. Greco, May 3, 2012, ¶ 12; Expert Report of Bruce S. Harris, May 3, 2012, ¶ 8; and Expert Report of Dr. Gloriana St. Clair, May 3, 2012, ¶ 7.

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- price for any book that extensively uses the term “choke price,” for example, but be unwilling (or unable) to spend hours in a bookstore or library finding the books that meet her needs.
24. Google Books has decreased the costs associated with identifying the content that best fits a consumer’s needs. As a result, Google Books has enabled increased dissemination of information and increased productivity.³⁴ Increased productivity may yield other tangible benefits such as accelerated progress in research and development. All of these factors result in increased social welfare.
 25. Another benefit of Google Books relates to its ability to improve the match between the consumer’s needs and the available content. The snippets provided by Google Books can be viewed as a form of “informational” advertising that gives users the ability to find content that is best-suited to their needs, and for authors to reach those users.
 26. As early as Alfred Marshall (1920), economists have examined the role of advertising in consumer markets. Marshall identified “constructive” advertising as advertising that conveys useful information to consumers in advance of a purchase.³⁵ Later work has developed models of advertising in which the role of advertising is to inform consumers about the existence of a product or its characteristics.³⁶ Under these circumstances, while advertising can benefit the seller through increased revenues, advertising also benefits the consumer, because advertising leads consumers to products that improve the consumer’s utility.
 27. Empirical studies have demonstrated that many advertisements inform the consumer about the existence of a product and its characteristics. This allows the consumer to determine whether the advertised bundle of characteristics meets the consumer’s needs.

³⁴ Deposition of Paul Aiken, April 19, 2012, Rough Transcript, p. 43; and Expert Report of Dr. Gloriana St. Clair, May 3, 2012 ¶¶ 7, 44.

³⁵ Alfred Marshall, *Industry and Trade*, MacMillan and Company, 1920.

³⁶ See, for example, George Stigler, “The Economics of Information,” *Journal of Political Economy*, 1961, 69(3), pp. 213-225; Phillip Nelson, “Advertising as Information,” *Journal of Political Economy*, 1974, 82(4), pp. 729-754; and Gerard Butters, “Equilibrium Distributions of Sales and Advertising Prices,” *The Review of Economic Studies*, 1977, 44(3), pp. 465-491. See also Gene Grossman and Carl Shapiro, “Informative Advertising with Differentiated Products,” *The Review of Economic Studies*, 1984, 51(1), pp. 63-81: “...advertising does serve a useful social function; it informs customers about brands’ characteristics, and improves the matching of consumers and products,” p.77. Erdem and Keane (1996) develop a model in which consumers who were exposed to more advertisements had better information and were therefore more likely to persist with the most suitable alternative (Tulin Erdem and Michael Keane, “Decision-Making under Uncertainty: Capturing Dynamic Brand Choice Processes in Turbulent Consumer Goods Markets,” *Marketing Science*, 1996, 15(1), pp. 1-20.) Using data on 150 advertisements of Yoplait yogurt, Akerberg (2001) exploits variation in advertising effectiveness across consumers with different levels of experience about a product to show that advertising that provides information about inherent brand characteristics primarily affects inexperienced consumers. (Daniel Akerberg, “Empirically Distinguishing Informative and Prestige Effects of Advertising,” *RAND Journal of Economics*, 2001, 32(2), pp. 316-333.)

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Exposure to advertising can improve the matching of consumers and products in a variety of industries.³⁷

28. Google Books, therefore, functions like Marshall's "constructive" advertising, in that it informs a consumer about the existence of specific books that meet the consumer's needs. Of course, unlike most forms of advertising, in which advertising messages are "pushed" to consumers, consumers affirmatively choose to undertake a search on Google to learn about content relevant to that consumer's particular interests and they are able to use search terms that they choose rather than terms chosen for them. Thus, Google Books can also lower a consumer's search costs in finding a particular book.
29. In this section, I have emphasized the benefit of Google Books to consumers. However, as I discuss in more detail below, authors and publishers also generally benefit from the existence of this advertising channel and from the lowering of search costs for consumers.

C. Summary

30. Google Books is, therefore, clearly a "new" good. Google Books provides consumers a means of searching the entire text of works that are archived in the collection in order to obtain information about the most relevant works for the consumer. Google Books as a new good is related to, but distinct from, pre-existing goods. It is more comprehensive and more accessible than previous indexing systems such as card catalogues or computerized keyword search, and, unlike keyword search, it allows consumers to search based on their interests rather than on criteria or descriptions created by others. This new good creates benefits to consumers that were not previously available.

IV. The Effect of Google Books on Authors

31. In the previous section, I discussed the welfare benefits to consumers of Google Books. In this section, I discuss the effect of the introduction of Google Books on authors. To analyze this effect, I examine whether Google Books is a complement to the purchase of books, or whether, by contrast, Google Books serves as a substitute for books. In addition, I consider whether, in the absence of Google Books, other markets might have arisen wherein authors could accrue rents that they do not currently accrue.

A. Google Books is a Complement – Not a Substitute – to the Purchase of a Book

32. A major challenge faced by the author or publisher of a book is "getting noticed."³⁸ There are more books in print than any consumer could possibly read or use and more

³⁷ For example, Akerberg (2001) empirically examines advertising exposures and grocery purchases and demonstrates that the advertising in that market's primary effect was to inform consumers of the product's existence. Anand and Shachar (2011) find that exposure to informational advertising in the form of television previews improves the match between consumers and their preferred network television shows. (Bharat Anand and Ron Shachar, "Advertising, the Matchmaker," *RAND Journal of Economics*, 2011, 42(2), pp. 205-245).

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than any physical bookstore could stock. The number of books released each year has expanded,³⁹ and some consumers presumably consider other educational or entertainment options when deciding whether to search for and possibly purchase a book.

33. As Mr. Bruce Harris, a publishing strategist and former President of trade sales and marketing at Random House explains, publishers and authors recognize that, in order for a book to have a market, consumers must first find or notice that book.⁴⁰ A major role of the publisher is to attempt to achieve consumer awareness of the publisher's books. Consequently, publishers employ many tools to generate publicity about the book and to get the book noticed. These include: provision of excerpts (often longer than the typical snippets at issue in this litigation) to publications and media outlets for use in articles and book reviews, provision of "blads" (an acronym for "book layout and design") to booksellers and consumers, as well as substantial excerpts of forthcoming books on a stand-alone basis or bundled with other promotional materials.⁴¹
34. I understand that it is Mr. Harris' view that the excerpts or snippets provided by Google Books in response to a user's search bear a resemblance to these mechanisms that consumers may use to "find" a book. Whether a more extensive sample of text is accessible (as in the case of the books that enter Google Books via the Partner Program) or whether snippets are available, Google Books makes it easier for a book to get noticed, which may increase demand for that book and benefit the author.⁴²
35. The capacity of Google Books to help authors get noticed is echoed by deposition testimony provided in this case. Eric Zohn of William Morris Endeavor (WME), for example, testified that "if people are searching for information and it becomes easy to find your product in a very, very, very, very crowded marketplace where there are -- I don't even know the number of how many books are published every year, year after year after year, I think any tool that helps readers or buyers find your product above someone else's is beneficial."⁴³

³⁸ Expert Report of Bruce S. Harris, May 3, 2012, ¶ 7; and Expert Report of Professor Albert N. Greco, May 3, 2012, ¶ 12.

³⁹ See, for example, "Print Isn't Dead, Says Bowker's Annual Book Production Report," Press Release, May 18, 2011, available at http://www.bowker.com/en-US/aboutus/press_room/2011/pr_05182011.shtml, accessed May 2, 2012. See also "European Book Publishing Statistics," December 7, 2010, available at <http://www.fep-fee.be/documents/EUROPEANBOOKPUBLISHINGSTATISTICS2009websiteIEL.pdf>, accessed April 30, 2012.

⁴⁰ Expert Report of Bruce S. Harris, May 3, 2012, ¶¶ 7, 14; and Interview with Mr. Bruce S. Harris, April 10, 2012.

⁴¹ Expert Report of Bruce S. Harris, May 3, 2012, ¶¶ 10-14; and Interview with Mr. Bruce S. Harris, April 10, 2012.

⁴² Expert Report of Bruce S. Harris, May 3, 2012, ¶¶ 14, 16; and Interview with Mr. Bruce S. Harris, April 10, 2012.

⁴³ Deposition of Eric Zohn, April 13, 2012, p. 19. Paul Aiken, Executive Director of the Authors Guild, also testified that snippets provided by Google Books may be helpful to consumers in finding books. See Deposition of Paul Aiken, April 19, 2012, Rough Transcript, p. 120.

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36. Further evidence of the benefit to authors of Google Books can be seen by the success of the Google Partner Program, which has met the market test. That is, there is market-based evidence that market participants – authors and publishers – see value in Google Books, so much so that through the Partner Program, they have opted to have even larger excerpts than snippets available for consumers to read. From an economic perspective, the fact that publishers and authors participate in the program and provide such excerpts is evidence that they expect their participation in Google Books to help authors get noticed and to increase sales.
37. In fact, all of the top publishers in the U.S. have become partners with Google Books. According to Nielsen, a media industry research firm, the top publishers in the U.S. in 2011 were: Random House, Penguin Group, HarperCollins, Simon & Schuster, Hachette Book Group, Macmillan, Scholastic, Perseus, John Wiley and Sons, Harlequin Books, Houghton Mifflin Harcourt, Workman, Abrams, Kensington Publishing, and WW Norton. These publishers accounted for over 70 percent of all books sold in the U.S. in 2011.⁴⁴ All participate in the Partner Program.⁴⁵
38. There is also anecdotal evidence that inclusion of books in Google Books has resulted in greater sales of those books. Publishers have noted increased sales of backlisted books.⁴⁶ Authors have also noted increased awareness and sales of their books upon inclusion in Google Books.⁴⁷
39. I have discussed the demonstrated eagerness of publishers to embrace Google Books through the Partner Program. However, further market-based evidence that Google Books benefits authors and publishers derives from the fact that authors and publishers are eager, in a broad array of contexts, to provide excerpts of their works to readers, free of charge. The simplest example of this pre-dates the internet technologies that I discuss below. When book sales took place largely through physical bookstores, consumers were almost always allowed (indeed encouraged) to sample the books before buying by inspecting the book as displayed in the bookstore.⁴⁸ In general, the amount of time that consumers spent reading the book before buying was not limited by publishers or authors.

⁴⁴ “U.S. Top 15 Publisher Sales Data,” Nielsen BookScan Report, received April 26, 2012.

⁴⁵ The popularity and success of the Partner Program was also a topic of testimony by Google employee Thomas Turvey. He testified that, in all, 45,000 publishers have joined the Partner Program, and that the number of partners continues to grow. See Deposition of Thomas Turvey, February 17, 2012, p. 33. This fact is further evidence that Google Books is beneficial to authors.

⁴⁶ For example, Edward Crutchley, Book Sales Director at Blackwell Publishing noted that “[a] 1999 Blackwell's title, *Metaphysics: An Anthology*, has had 2,583 page views and 597 ‘buy this book’ click-throughs since it became part of the program” and the “[t]he high rate of ‘buy this book’ clicks is translating into sales for our deep backlist.” Evan Schnittman of Oxford University Press also noted an increase in sales: “We have seen overall traffic to our site increase, backlist sales rise, and we've acquired nearly 4,000 new direct book customers for free since the program launched.” See <http://books.google.com/intl/en/googlebooks/thoughts.html>, accessed April 17, 2012.

⁴⁷ For example, Richard Lowry, author of *The Gulf War Chronicles*, observed that after his book first appeared in Google Books, the sales ranking of his book on the Barnes & Noble index increased by 85 percent. See http://books.google.com/googlebooks/author_lowry.html, accessed April 30, 2012.

⁴⁸ Expert Report of Bruce S. Harris, May 3, 2012, ¶ 15.

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Indeed, in more recent years, the location of coffee shops within bookstores appears to encourage consumers to sample a book extensively before buying. Thus, searching inside the book was always feasible, albeit limited to the stock of books in the bookstore and the time that the consumer had to spend there.

40. As consumers have turned to buying books online and downloading digital books as their primary means of consumption, publishers and internet retailers have created opportunities for consumers to sample excerpts of books.⁴⁹ Specific evidence that authors expect to benefit from the provision of excerpts to readers can be seen in the success of Amazon's "Search Inside The Book" program. "Search Inside The Book" allows users to search the full text of certain books for specific search terms and to view excerpts of the book that contain the search term.⁵⁰
41. Many of the top U.S. publishers discussed above also use Amazon's "Search Inside The Book" feature for books that they publish. The fact that publishers and authors voluntarily provide extensive on-line access to users suggests that publishers and authors expect, on net, that doing so will help authors get noticed and provide a positive return. This is further market-based evidence that providing readers with excerpts of books helps to sell books.
42. In fact, Amazon reported that following the introduction of its "Search Inside The Book" program, sales of books with the "Search Inside The Book" capability increased by nine percent, relative to books without the "Search Inside The Book" capability.⁵¹ Frank Urbanowski, Director of MIT Press, observed that the increased accessibility to backlist titles through the internet had resulted in a 12 percent increase in sales of these titles.⁵² Similarly, Nora Rawlinson, the editor of *Publishers Weekly*, noted: "Publishers are finding that books on their backlists are suddenly selling well. Bookstores are great for browsing but they are difficult places to find a specific title...The Internet is providing access for people who just can't find the book they are looking for in a store."⁵³
43. The benefits to authors of providing users the ability to read excerpts of books is also evidenced by the structure of the "Back In Print" program which is provided by iUniverse and promoted by the Authors Guild. Under the "Back in Print" program, authors provide a hard copy of their out-of-print book to iUniverse, which digitizes the book and

⁴⁹ Expert Report of Bruce S. Harris, May 3, 2012 ¶ 13; Interview with Mr. Bruce S. Harris, April 10, 2012; Expert Report of Professor Albert N. Greco, May 3, 2012, ¶ 14; and Deposition of Paul Aiken, April 19, 2012, Rough Transcript, pp. 145-146.

⁵⁰ See <http://www.amazon.com/Search-Inside-Book-Books/b?ie=UTF8&node=10197021>, accessed May 4, 2012.

⁵¹ "Amazon.com Announces Sales Impact from New Search Inside the Book Feature," October 30, 2003, available at <http://phx.corporate-ir.net/phoenix.zhtml?c=176060&p=irolnewsArticle&ID=502769&highlight=>, accessed April 30, 2012.

⁵² Professional Publishing Report, "University Presses Credit Internet For Increased Sales," 1999, 3(2).

⁵³ Michael Lyster, "Printed Words Get Redefined In Digital Age," *Investor's Business Daily*, Computers and Technology Section, Page A6, June 2, 1999.

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facilitates the production of new, print-on-demand hard copies.⁵⁴ The Authors Guild recommends that authors participating in the “Back In Print” program should make the first chapter of the book available for browsing online, because it “believe[s] that allowing a book to be browsed in this way promotes the sale of the book.”⁵⁵

44. All these observations about Google Books, Amazon’s “Search Inside The Book,” and iUniverse, are consistent with what economic theory would predict. Google Books is a search tool that gives consumers a means of identifying the book content that best suits their needs and interests. Economic theory predicts that technologies and processes that lead to better matches between buyers and sellers will, in general, lead to increased revenues (lower search costs lead to more search and better search). As a matter of economics, we would also expect that when a better match can be made between buyers and sellers, sellers will be able to sell more goods and command a higher price for the good. That is, a consumer is willing to pay more for a book that the consumer understands contains exactly the material (or the aesthetic experience) that the consumer is seeking than the consumer is willing to pay for a book that the consumer is uncertain about, or understands is an imperfect fit.⁵⁶
45. I have described a number of mechanisms through which publishers and authors affirmatively choose to provide snippets and samples of book content to consumers in order to drive sales of those books. As I explained, Google Books also offers sampling opportunities that publishers and authors have found to be valuable. Some of the sampling methodologies that I have discussed (such as Amazon’s “Search Inside The Book”) are, in part, a response to a change in the way at least some consumers buy books.⁵⁷ Mechanisms like “Search Inside The Book” and the Google Partner Program have been embraced by publishers. These are not only a means of improving upon the traditional within-store browsing experience, they also provide mechanisms for promoting books beyond those that would have been stocked by any or many traditional physical books.
46. A related benefit of the search capability of Google Books is its ability to increase interest in and sales of books that may be relatively unknown, rare, or out-of-print. Research on the effect of the internet supports the theory of a “long tail” or the creation of marketplaces where buyers and sellers, who otherwise would not find each other, can meet.⁵⁸ I expect that Google Books has the same effect.

⁵⁴ Deposition of Paul Aiken, April 19, 2012, Rough Transcript, pp. 172 – 173.

⁵⁵ Deposition of Paul Aiken, April 19, 2012, Rough Transcript, p. 175.

⁵⁶ For example, Erdem et al. (2007) use Nielsen scanner data on various consumer experience goods to show that advertising raises consumers’ willingness to pay for a brand. (Tulin Erdem, Michael Keane and Baohong Sun, “The Impact of Advertising on Consumer Price Sensitivity in Experience Goods Markets,” *Quantitative Marketing and Economics*, 2007, 6 (2), pp. 139-176.

⁵⁷ Expert Report of Bruce S. Harris, May 3, 2012, ¶ 9.

⁵⁸ For a discussion of the “long tail” in the popular media, see, for example, Chris Anderson, *The Long Tail: Why the Future of Business Is Selling Less of More*, Hyperion, 2006; and Chris Anderson, “The Long Tail,” *Wired*, October 2004: “What’s really amazing about the Long Tail is the sheer size of it. Combine enough

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47. While I do find substantial evidence that Google Books is a complement to the purchase of a book and thus, should stimulate book sales, I have not found evidence that Google Books searches are a substitute for the purchase of books. That is to say, there is no reason to expect that authors have actually lost sales as a result of Google Books. Furthermore, I have seen no evidence that the snippets provided by Google Books – which are shorter than excerpts often voluntarily provided by publishers – have replaced sales of the underlying work.⁵⁹ On the basis of the discussion above, I conclude that Google Books is a complement to the underlying books, and would therefore be expected to increase sales of the underlying books. I conclude that Google Books benefits authors.

B. Had Google Not Developed Google Books, It is Likely that No Alternative Market Would Have Arisen

48. A related question to the one discussed above is whether, in the absence of Google Books, a market might have arisen in which authors stood to benefit in ways that they do not currently. I understand, in particular, that Plaintiffs argue that, were it not for Google Books, a market could have arisen in which firms would compete for rights to scan and index books; firms would pay authors for the right to scan and index their works, and perhaps display snippets; and any rents that would accrue (say, from advertising revenue or click-through royalties) would be shared with the author.
49. The underlying premise of any such hypothetical market runs counter to the basic economics of this industry outlined above – there is no reason to expect that a market would arise between copyright holders (as sellers) and Google (as the buyer), when, as discussed above, it is the copyright holder who is benefiting from the use of the copyrighted material.⁶⁰ For example, as discussed above, Amazon does not pay rights holders for allowing their books to be searched via the “Search Inside The Book” program, yet authors and publishers opt to allow books to be searched and they do so without payment.^{61 62} In contrast to this evidence of market participants transacting to

non\hits on the Long Tail and you've got a market bigger than the hits. Take books: The average Barnes & Noble carries 130,000 titles. Yet more than half of Amazon's book sales come from outside its top 130,000 titles. Consider the implication: If the Amazon statistics are any guide, the market for books that are not even sold in the average bookstore is larger than the market for those that are...” For academic research on the “long tail,” see, for example, Erik Brynjolfsson, Yu (Jeffrey) Hu, and Duncan Simester, “Goodbye Pareto Principle, Hello Long Tail: The Effect of Search Costs on the Concentration of Product Sales,” *Management Science*, 2011, 57(8): “The Internet channel’s ability to allow consumers to acquire product information with greater convenience and at lower costs leads to increased demand for niche products. Many offline book shoppers do not search deeply, simply because of the inconvenience of locating a niche product in a big-box store with thousands of products on its shelves;” and Anita Elberse and Felix Oberholzer-Gee, “Superstars and Underdogs: An Examination of the Long-Tail Phenomenon in Video Sales,” *Marketing Science Institute*, 2007.

⁵⁹ Publishers presumably provide excerpts because, in their business judgment, these excerpts will, on net, be complements to the actual book, not substitutes.

⁶⁰ See also Expert Report of Bruce S. Harris, May 3, 2012, ¶¶ 17-18; and Expert Report of Professor Albert N. Greco, May 3, 2012, ¶15.

⁶¹ Indeed, some commercial services offer programs in which they charge authors fees to facilitate the searching of an author’s book using Google or Amazon. iUniverse, which the Authors Guild recommends

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allow search without payment, I have seen no evidence that any firm has paid, for example, for permission to display snippets.⁶³

50. These facts suggest that authors and publishers recognize that search functionality, and particularly tools that enhance an author's ability to get noticed, provide benefits that flow to the author. This behavior is consistent with the conclusion that Google Books complements the sale of books rather than substituting for such sales. It does not stand to reason, then, that a market should arise in which payments would flow from the providers of these tools – like Google Books – to authors.⁶⁴
51. With respect to libraries, I understand from Dr. St. Clair, the Dean of Libraries at Carnegie Mellon University, that, in her view, there was and is no likelihood that libraries will seek permission to digitize books merely for search or snippet display. First, when libraries have undertaken digitization efforts, it has been for the purpose of displaying the full text of certain books. To the extent libraries have licensed digitization, it has been for such full-text display.⁶⁵ From an economic perspective, the display of the full text of a book differs significantly from the search of a book's text or the display of snippets or other mere portions of a book. Full-text display of a book may well substitute for the purchase of a book, while the preceding analysis shows that search, snippet display, or even the greater display of excerpts authorized by publishers, does not.
52. Second, historically libraries have not focused on comprehensive digitization efforts. They have instead focused on public domain works or works of particular institutional or

to its members, is one such company. Deposition of Paul Aiken, April 19, 2012, Rough Transcript, pp. 139-140, 176-177. For-fee services are also offered by iUniverse to assist authors in participating in Google Books, Amazon's "Search Inside The Book," and Barnes & Noble's "See Inside the Book" programs. See, for example, <http://www.iuniverse.com/ServiceStore/ServiceDetail.aspx?ServiceId=BS-471>, accessed April 27, 2012 and <http://www.iuniverse.com/ServiceStore/ServiceDetail.aspx?ServiceId=BS-911>, accessed May 2, 2012. In addition to offering these services, which help authors get noticed by consumers, iUniverse also offers a service to assist authors in getting noticed by book buyers, librarians, and researchers. See <http://www.iuniverse.com/ServiceStore/ServiceDetail.aspx?ServiceId=BS-538>, accessed May 2, 2012.

⁶² Even the Authors Guild recommends that authors make a portion of their books searchable. See Deposition of Paul Aiken, April 19, 2012, Rough Transcript, p. 176.

⁶³ Author's Guild representative Paul Aiken was unable to identify such an example. Deposition of Paul Aiken, April 19, 2012, Rough Transcript, pp. 131-134. In contrast to the interactions we observe between publishers, authors, and Google and Amazon, music rights organizations like ASCAP and BMI arose as a solution to the problems of widely dispersed rights holders and widely dispersed music users. Music performance users consist of such disparate entities as radio stations, background music service providers, bars, restaurants, bowling alleys, and skating rinks. This dispersion of the potential licensees makes it prohibitively costly for rights holders to identify, negotiate with, and monitor all of the potential users of their music. Thus, the rights organization serves to coordinate and mediate the market in a far more cost-effective manner than if the rights holders and the potential infringers each had to negotiate separately. As distinct from music, widely dispersed users that would be costly to monitor do not exist for books.

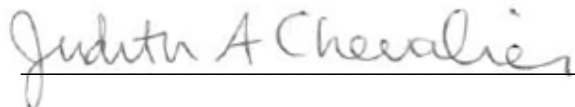
⁶⁴ Plaintiffs have argued that Congress (or another government agency) could create a new compulsory licensing regime. While perhaps true, nothing that Google has done precludes this from occurring, and the preceding analysis suggests that such a market could only be created by law because the relevant economic principles would not sustain it otherwise.

⁶⁵ Expert Report of Dr. Gloriana St. Clair, May 3, 2012, ¶¶ 5(a), 5(c), 25.

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local interests. Resource constraints have also limited such efforts. One general project preceding Google Books, at the University of Michigan, was estimated to require 900 years to complete.⁶⁶

53. Third, libraries' experience with rights clearance has shown that, to the extent clearance is required for digitization, it is prohibitively costly to create a comprehensive digital resource such as Google Books. Carnegie Mellon University, Harvard University, and Cornell University have all reported great difficulty in finding rights holders.^{67 68} Such limitations reduce the comprehensiveness, and thus the utility, of library digitization efforts relative to Google Books. These are also the type of costs that can make market participation infeasible for institutions that cannot bear those costs.
54. On the basis of the discussion above, I conclude that because the provision of snippets or excerpts is beneficial to authors, no market would arise in which payments flow from the provider of these tools, such as Google, to the author. I furthermore conclude that a market in which libraries would pay for the right to scan and index their entire collection for the purpose of search and snippet display is not likely to arise.



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May 4, 2012

⁶⁶ Deposition of Paul Courant, April 23, 2012, Rough Transcript, pp. 90, 97.

⁶⁷ See Letter from Sarah E. Thomas, Carl A. Kroch University Librarian at Cornell University to Jule L. Sigall, Associate Registrar for Policy & International Affairs at the U.S. Copyright Office, Re: Response by the Cornell University Library to the Notice of Inquiry Concerning Orphan Works, dated March 23, 2005, available at <http://www.copyright.gov/orphan/comments/OW0569-Thomas.pdf>, accessed May 1, 2012. See also Letter from Sidney Verba, Director, Harvard University Library and Pforzheimer University Professor at Harvard University to Jule L. Sigall, Associate Registrar for Policy & International Affairs at the U.S. Copyright Office, Re: Response by the Cornell University Library to the Notice of Inquiry Concerning Orphan Works, dated March 25, 2005, available at <http://www.copyright.gov/orphan/comments/OW0639-Verba.pdf>, accessed May 1, 2012. See also Denise Troll Covey, "Acquiring Copyright Permission to Digitize and Provide Open Access to Books," Digital Library Federation Council on Library and Information Resources, Washington, D.C., October 2005.

⁶⁸ In some cases even publishers are not clear on whether they own the rights to a book, meaning that even permissions that may be obtained carry some degree of risk that they are unreliable. See Expert Report of Dr. Gloriana St. Clair, May 3, 2012, ¶ 36.

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Appendix A
Curriculum Vitae
Judith A. Chevalier

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School of Management
Yale University
135 Prospect Street
New Haven, CT 06520
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Primary Positions:

September 2007-June 2009, Deputy Provost for Faculty Development, Yale University.

February 2005-present, William S. Beinecke Professor of Economics and Finance, Yale School of Management.

June 2001- February 2005, Yale University School of Management, Professor of Finance and Economics.

July 1999-May 2001, University of Chicago, Graduate School of Business, Professor of Economics.

July 1997-June 1999, University of Chicago, Graduate School of Business, Associate Professor of Economics.

July 1994-June 1997, University of Chicago, Graduate School of Business, Assistant Professor of Economics.

July 1993-June 1994, Harvard University, Department of Economics, Assistant Professor of Economics.

Other Positions:

Co-editor, *Rand Journal of Economics*, May 2009-present.

Prize committee, Fisher Black Prize, American Finance Association, 2008.

Editorial Board, *Journal of Industrial Economics*, 2006-2011.

Nominating Committee, American Economic Association, 2007-2008.

Nominating Committee, American Academy of Arts and Sciences, 2006, 2009, 2010.

Co-Editor, *American Economic Review*, November 2004-June 2007.

Steering Committee, Committee on Yale College Education, 2010- .

Chair, Faculty Section and Steering Committee, Committee on Yale Reaccreditation, 2008-2010.

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Search Committee, American Economic Association committee for the editor of the AEA Journal of Microeconomics, Fall 2006.

Executive Committee, American Economic Association, January 2005- January 2008.
Elected member, Finance committee member. Member of ad hoc committee on journals.

Visiting Committee, MIT Economics Department, February 2005, February 2007, March 2011.

Member, Dean Search Committee, Yale School of Management, 2004- 2005, 2009-2010.

Chair, Yale University Committee on Cooperative Research, 2003-2006. Member, 2002-2003.

Member, Provost's Committee on Sexual Misconduct, 2009-2010

Member, Council of the Women's Faculty Forum, Yale University, 2003-present.

Member, Board of the Chief Executive Leadership Institute, 2005-present.

January 2002-December 2004. Board member, Committee on the Status of Women in the Economics Profession (CSWEP), American Economic Association.

January 2002-present. Fellow, Davenport College, Yale University. Member, Summer 2005, search committee for Davenport College Dean.

February 2003- October 2004. Editor, The B.E. Journals in Economic Analysis and Policy.

AEA Search Committee for Editor of the Journal of Economic Literature, 2003.

January 2002-present. Advisory Board, *Quantitative Marketing and Economics*.

January 2001-July 2002. Associate Editor, *American Economic Review*.

March 2000-September 2004. Associate Editor, *The Journal of Finance*.

American Finance Association nominating committee, 1999.

July 1999 – July 2002, Associate Editor, *Review of Financial Studies*.

January 1999 – December 2003, Associate Editor, *Quarterly Journal of Economics*.

January 1999 – December 2003, Associate Editor, *Journal of Economic Perspectives*.

July 1997-October 2004, Associate Editor, *Journal of Industrial Economics*.

January 1996-October 2004, Associate Editor, *Rand Journal of Economics*.

September 1999-present, Research Associate, National Bureau of Economic Research.

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September 1993-September 1999, Faculty Research Fellow, National Bureau of Economic Research.

Consortium Faculty, Cardean University, Unext.com, 1999-2001. Consulted on design of web-based strategy course.

Research Interests:

Time use. Competition in high technology industries and telecommunications. Competition and regulation in retail industries; implications of retail pricing behavior for macroeconomics. Competition on the Internet and for information goods. The problems facing durable goods manufacturers. The interaction between firm capital structure and product market competition. The impact of liquidity constraints on markup, inventory, and capital expenditure cyclicalities. Testing models of agency and career concerns. The impact of “noise traders” on financial markets. Cross-subsidization of activities within conglomerate firms.

Education:

May, 1993, Ph.D., Economics, Massachusetts Institute of Technology.

May, 1989, B.A., *summa cum laude*, Yale University, Distinction in the Major, Economics.

Honors and Awards:

National Science Foundation research grant for 2011-2014, SBR 1128322, “Strategic Shoppers.”

William F. O’Dell Award, *Journal of Marketing Research*, 2011. For paper published in the *Journal of Marketing Research*, August 2006.

Elected member, American Academy of Arts and Sciences.

Nominated paper, Smith Breeden prize, *Journal of Finance*, 1999. For paper published in the *Journal of Finance*, June 1999.

Recipient, first annual Elaine Bennett Research Prize. This prize is intended to recognize research by a young woman in any area of economics. The prize is administered by the American Economic Association Committee on the Status of Women in the Economics Profession. Presented January 1999.

Alfred P. Sloan Foundation, Sloan Research Fellow, Awarded for 1997-1998, and 1998-1999 academic years.

Smith Breeden “Distinguished Paper” prize, *Journal of Finance*, 1995. Prize awarded for paper published in the *Journal of Finance*, September 1995.

National Science Foundation research grant SBR 94-14141 for 1994-1996.

Review of Economic Studies tour (one of seven doctoral students presenting work at conferences in Europe and Israel), Summer, 1993.

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National Science Foundation Graduate Fellowship, 1989-1992.

Dickerman Prize, Yale University, for Best Senior Thesis in Economics, 1989.

Publications:

With Keith Chen, "Are Women Overinvesting in Education? Evidence from the medical profession," forthcoming, *Journal of Human Capital*.

With Austan Goolsbee, "Are Durable Goods Consumers Forward Looking? Evidence from the College Textbook Market", *Quarterly Journal of Economics* vol 124, November 2009.

With Keith Chen, "The Taste for Leisure, Career Choice, and the Returns to Education", *Economics Letters* Vol. 99 (May 2008), 353-356.

With Fiona Scott Morton, "State Casket Seller Restrictions: A Pointless Undertaking?", *Journal of Law and Economics*, August 2008.

With Dina Mayzlin, "The Effect of Word of Mouth on Sales: Online Book Reviews", *Journal of Marketing Research*, August 2006.

"What Do We Know About Cross-subsidization? Evidence from Merging Firms", *Advances in Economic Analysis & Policy* 2004: Vol. 4: No. 1, Article 3.
<http://www.bepress.com/bejeap/advances/vol4/iss1/art3>

With Austan Goolsbee, "Valuing Internet Retailers: Amazon and Barnes and Noble", *Advances in Applied Microeconomics* 12: Organizing the New Industrial Economy, 2003.

With Austan Goolsbee, "Measuring prices and price competition online: Amazon vs. Barnes and Noble," *Quantitative Marketing and Economics* I (2), June 2003.

With Anil Kashyap and Peter Rossi, "Why don't price rise during periods of peak demand? Evidence from scanner data," *American Economic Review*, March 2003.

With Dennis Carlton, "Free riding and sales strategies on the internet," *Journal of Industrial Economics*, December 2001.

With Chris Avery, "Identifying Investor Sentiment from Price Paths: The Case of Football Betting," *Journal of Business*, October 1999.

With Glenn Ellison, "Are Some Mutual Fund Managers Better than Others? Cross-sectional Patterns in Behavior and Performance", *Journal of Finance*, June 1999.

With Chris Avery, "Herding over the Career," *Economics Letters*, June 1999.

With Glenn Ellison, "Career Concerns of Mutual Fund Managers," *Quarterly Journal of Economics*, May 1999.

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With Chris Avery and Scott Schaefer, “Why Do Managers Undertake Acquisitions?: an Analysis of Internal and External Rewards to Acquisitiveness”, *Journal of Law, Economics, and Organization*, April 1998.

With Glenn Ellison, “Risk Taking by Mutual Funds as a Response to Incentives,” *Journal of Political Economy*, December 1997. Reprinted in P.L. Joskow and M. Waterson, eds., *Empirical Industrial Organization*, Edward Elgar, 2004.

With David S. Scharfstein, “Capital Market Imperfections and Countercyclical Markups: Theory and Evidence,” *American Economic Review*, September 1996.

“Do LBO Supermarkets Charge More? An Empirical Analysis of the Effects of LBOs on Supermarket Pricing,” *Journal of Finance*, September 1995.

“Capital Structure and Product Market Competition: Empirical Evidence from the Supermarket Industry,” *American Economic Review*, June 1995. Reprinted in P.L. Joskow and M. Waterson, eds., *Empirical Industrial Organization*, Edward Elgar, 2004.

With David S. Scharfstein, “Liquidity Constraints and the Cyclical Behavior of Markups,” *American Economic Review Papers and Proceedings*, May 1995.

Working Papers/Work in Progress:

With Dina Mayzlin and Yaniv Dover, “Promotional Reviews: An Empirical Investigation of Online Review Manipulation”, March 2012.

With Chris Avery and Richard Zeckhauser, “The CAPS Prediction System and Stock Market Returns”, NBER Working Paper 17298, August 2011. In revision.

With Anil Kashyap, “Best Prices”, February 2011, NBER Working Paper 16680.

With Fiona Scott Morton and David Harrington, “Regulating Direct Cremations: The Cost of Seemingly Small Regulatory Changes”, January 2011.

With Fiona Scott Morton and David Harrington, “Differentiated to Death”, Yale School of Management working paper, April 2010.

With Austan Goolsbee, “Entry and Market Size: The College Textbook Market.”

Popular Publications/ Teaching Cases:

With Jaan Elias, “Potash Corporation of Saskatchewan”, Yale Case 11-031, October 2011.

New York Times, “A Carbon Cap that Starts in Washington”, 12/16/07.

New York Times, “In Search of Wireless Wiggle Room”, 10/21/07.

New York Times, “Welcome Stranger, Here’s a Speeding Ticket”, 9/2/07.

Slate, “Oversell” 12/12/06.

Expert Report of Judith A. Chevalier

Financial Times, “The Pros and Cons of Entering a Market,” *Financial Times Mastering Strategy Series*, November 1, 1999. Reprinted in *Mastering Strategy*, Prentice Hall, 2000

Financial Times, “When it Can be Good to Burn your Boats,” *Financial Times Mastering Strategy Series*, October 25, 1999. Reprinted in *Mastering Strategy*, Prentice Hall, 2000

Teaching: “Competitor”, Core class, Yale School of Management, Fall 2011.

“Technology Strategy”, Yale School of Management, Fall 2009.

“Business, Public Policy, and the Information Economy”, Yale School of Management, Spring 2012, Fall 2010, Spring 2007, Spring 2006, Spring 2005.

Undergraduate “Business, Public Policy, and the Information Economy”, Yale University, Spring 2010, Spring 2008, Spring 2007, Spring 2006, Spring 2005, Spring 2004.

PhD. level Industrial Organization, Yale Economics Department, Spring 2003.

Competitive Strategy, Yale School of Management. 2002-present.

Competitive Strategy, Graduate School of Business, University of Chicago. Two sections, Winter 2001. Three sections, Winter 2000. Two sections, Autumn 1996; three sections, Autumn 1997; three sections, Autumn 1998.

Competitive Strategy, Executive MBA Program (XP), University of Chicago. One section, Winter 2001.

PhD. Industrial Organization, Graduate School of Business, University of Chicago. Co-taught with Dennis Carlton and Josef Perktold, Autumn 1996 and Winter 1997.

Economics of the Firm, Graduate School of Business, University of Chicago, Executive MBA course. Taught in domestic executive program in Autumn 1995, taught in international executive program in Barcelona, July-August 1996.

Microeconomics, Graduate School of Business, University of Chicago, MBA course. Seven sections, 1994-1995. One section, Autumn 1999.

Industrial Organization, Department of Economics, Harvard University, Ph.D. course, Spring, 1994. Co-taught with Glenn Ellison.

Corporate Finance, Department of Economics, Harvard University, Ph.D. course, Spring, 1994. Co-taught with Andrei Shleifer.

Corporate Control and Governance, Department of Economics, Harvard University, Undergraduate Course, Spring, 1994.

Strategy teaching for the Business Advisor program for RSM McGladrey, Inc., Graduate School of Business, University of Chicago. Autumn 1999, Spring 2001, Spring 2002.

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Research/Seminar Presentations:

ABA Section of Antitrust Spring Meeting, Washington DC (scheduled for 3/2012).
American Economic Association (4)
American Finance Association (2)
American Institute for Economic Research
Boston University, Department of Economics
Brigham Young University Department of Economics
Brown University Department of Economics
Carnegie Mellon University GSIA (2)
Center for Research in Securities Prices, University of Chicago
Chief Executive Leadership Institute
Columbia University Business School (2)
Columbia University, Department of Economics (2)
Cornell University, Applied Economics and Management
Cornell University Business School
Cornell University Department of Economics
Dartmouth College, Tuck School of Business (2)
Dartmouth College, Department of Economics.
Duke University, Department of Economics(2)
Duke University, Fuqua School of Business (2)
Econometric Society Winter Meetings
Federal Reserve Bank of New York
Free University of Brussels
Georgia Finance Forum
Harvard Business School (2)
Harvard University Department of Economics (3)
Harvard University, Kennedy School of Government
Harvard University Law School
International Industrial Organization Society (2)
Johns Hopkins University, Department of Economics
London School of Economics
Massachusetts Institute of Technology, Economics Department (4)
Massachusetts Institute of Technology, Sloan School of Management (2)
Milton Friedman Institute, University of Chicago.
National Bureau of Economic Research, Corporate Finance Group (3)
National Bureau of Economic Research, Ecommerce Group.
National Bureau of Economic Research, Economic Fluctuations (2)
National Bureau of Economic Research, Industrial Organization Group (5)
National Bureau of Economic Research, Monetary Economics Group (2)
New York University, Stern School of Business (3)
Northwestern University, Kellogg School of Business (3)
Northwestern University, Department of Economics
Ohio State University, Department of Economics (2)
Princeton University, Department of Economics and Woodrow Wilson School (2)
Purdue University, Department of Economics
QME Conference
Rutgers University, Department of Finance
Stanford University, Graduate School of Business (4)
Tel Aviv University
Texas A&M University, Department of Economics

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U. des Sciences Sociales (Toulouse, France)
United States Department of Justice (2)
United States Federal Communications Commission
United States Federal Trade Commission (2)
University of Arizona, Finance Department
University of British Columbia, Summer industrial organization meeting
University of California at Berkeley, Haas School of Business (5)
University of California at Berkeley, Department of Economics
University of California at Los Angeles, Department of Economics
University of Chicago, Graduate School of Business (5)
University of Connecticut, Department of Agricultural Economics
University of Delaware, Department of Economics
University of Florida, College of Business Administration
University of Illinois, Department of Commerce and Business Administration (2)
University of Illinois at Chicago, Finance Department.
University of Indiana, Business School (2)
University of Maryland, College of Business and Management
University of Maryland, Department of Economics
University of Michigan, Department of Economics (2)
University of Michigan, School of Business Administration (2)
University of Minnesota, Department of Economics
University of Notre Dame, College of Business
University of Oregon, College of Business Administration
University of Pennsylvania, Wharton School (2)
University of Rochester, Simon School of Business
University of Southern California, School of Law
University of Toronto, Department of Economics
University of Wisconsin, Department of Economics
Washington University in St. Louis
Yale University, Department of Economics (3)
Yale University, School of Management (3)
Yale University, Law School (2)

Non-academic positions:

Board member, the Foote School, 2005-present. Co-Treasurer and Chair of Audit Committee, 2006- 2008. Treasurer and Chair of Finance Committee, 2009-present.

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Appendix B
Expert Reports and Testimony within the Past Four Years

1. United States District Court, Southern District of Ohio
The Procter & Gamble Company v. The Coca-Cola Company, Case No. 1:02CV393
Report
2. American Arbitration Association
SESAC, Inc. v. Television Music License Committee, Case No. 13 133 01583 05
Report and Testimony
3. United States District Court, District of New Hampshire
Presstek, Inc. v. Creo, Inc., Civil Action No. 05-CV-65-PB
Report and Testimony
4. United States District Court, District of Delaware
Advanced Micro Devices, Inc., et al. v. Intel Corporation, et al., Civil Action No. 05-441-JJF
Report
5. United States District Court, District of Delaware
State of New York by Attorney General Eric T. Schneiderman v. Intel Corporation, Case No. 09
827 (LPS)
Report and Testimony

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Appendix C Materials Considered

Legal Filings

Declaration of Daniel Clancy in Support of Google Inc.'s Opposition to Plaintiffs' Motion for Class Certification, February 7, 2012.

Declaration of E. Gabriel Perle in Support of Google Inc.'s Opposition to Plaintiffs' Motion for Class Certification, February 7, 2012.

Declaration of Hal Poret in Support of Google Inc.'s Opposition to Plaintiffs' Motion for Class Certification, February 6, 2012.

Defendant Google Inc.'s Opposition to Motion for Class Certification, February 8, 2012.

Defendant Google Inc.'s Supplemental Narrative Responses and Objections to Plaintiffs' Second Request for Production of Documents and Things, December 9, 2011.

Fourth Amended Class Action Complaint, October 14, 2011.

Memorandum of Law in Support of Plaintiffs' Motion for Class Certification, December 12, 2011.

Reply Memorandum of Law in Support of Plaintiffs' Motion for Class Certification, April 3, 2012.

Expert Reports

Expert Report of Bruce S. Harris, May 3, 2012.

Expert Report of Dr. Gloriana St. Clair, May 3, 2012.

Expert Report of Professor Albert N. Greco, May 3, 2012.

Depositions

Deposition of Daniel Clancy, February 10, 2012.

Deposition of E. Gabriel Perle, March 19, 2012.

Deposition of Eric Zohn, April 13, 2012.

Deposition of Hal Poret, March 22, 2012.

Deposition of Paul Aiken, April 19, 2012, Rough Transcript.

Deposition of Paul Courant, April 23, 2012, Rough Transcript.

Deposition of Stephane Jaskiewicz, February 14, 2012.

Deposition of Thomas Turvey, February 17, 2012.

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